

Snake Sockeye Salmon ESU

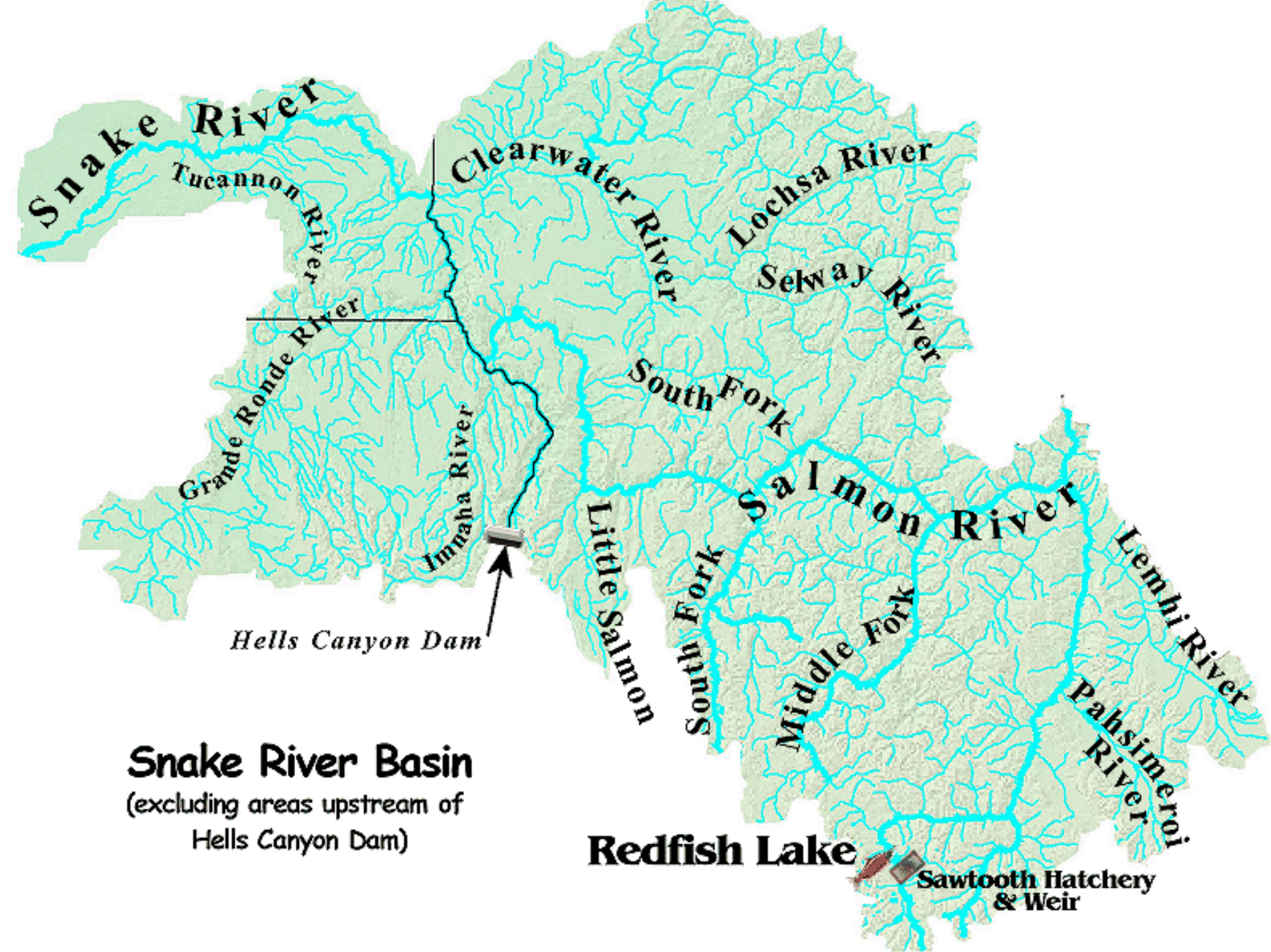
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Summary

- The Snake River Sockeye ESU consists of a remnant population that only existed in Redfish Lake in Stanley Basin, at the head of the Salmon River when the ESU was listed in 1991.
- Snake River Sockeye had previously existed in 3 or 4 other lakes in Stanley Basin, Wallowa Lake, and the Payette lakes.
- Impassable barrier dams, diversions and fishery management actions had reduced the ESU to a few thousand fish returning to Redfish Lake in the 1960's.
- In the 1970s and 1980s, the population declined to a few individuals.

Summary (continued)

- When the SR sockeye population declined to only a few to no anadromous returns in 1990, the entire anadromous population was preserved in the Captive Propagation program
- Between 1991 and 1997, 16 anadromous adults and several hundred smolts were collected to found the captive broodstock.



ESU Artificial Propagation Programs

- The broodstock now consists of several hundred fish of several year classes maintained in facilities at Eagle, Idaho, and Manchester, Washington
- Annual production is about 200,000 eyed eggs which are released at various life stages into the Stanley Basin Lakes
- Anadromous returns have ranged from a few fish to 250 fish per year, mostly from smolt-release strategy

Hatchery Listing Policy

Effects of hatchery fish on the likelihood of extinction of an ESU, depend on how hatchery fish affect four key attributes.

Effects on Abundance of ESU

- The Snake River Sockeye Captive Propagation Program has prevented extinction of this ESU
- There are several hundred adults in captivity and up to 200,000 eyed eggs produced each year.
- Sockeye are released as eyed eggs, parr, smolts and as mature adults for natural spawning
- Although there are a few anadromous adults, the abundance is still very low

Effects on Productivity of ESU

- Captive-reared and anadromous adults from the program have been released in the Stanley Basin Lakes and have spawned naturally, producing natural smolts.

Effects on Diversity of ESU

- The Captive propagation program preserved the genetic variability of this population when the natural component was at the point of extinction
- The captive population is now a “closed” population and diversity is at risk.

Effects on Spatial Distribution of ESU

- Fish have been released to Redfish, Pettit and Alturas Lakes in Stanley Basin

Net effect of Propagation Programs on the SR Sockeye ESU

- Monitoring and evaluation to date indicate that the captive propagation has prevented extinction
- The longer-term effects of captive rearing are as yet unknown
- The success of the program in returning fish to natural habitat has been limited

Effects of Artificial Propagation on VSP Attributes for Snake River Sockeye Salmon

Viability Criteria	BRT VSP Risk Score	Decreases Risk	Neutral or Uncertain	Increases Risk
Abundance	5.0		√	
Productivity	5.0		√	
Spatial Structure	4.9		√	
Diversity	5.0		√	

Endangered Threatened Not Warranted

BRT Findings: 100% 0% 0%

Recommendation: **No Change: Endangered**